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e CREATIONIST

Modern Problems in Science and Religion

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This article is the first of three by Professor Price on "Modern Science Confirming the Bible."

Modern Problems in Science and Religion

by GEORGE McCREADY PRICE (1870–1963)

PART ONE

THE PRESENT STATUS OF DARWINISM

MANY people not in close touch with scientific investigations are liable to blunder, and even to make themselves ridiculous, when speaking of the present status of Darwinism and the theory of evolution. Because with any well informed scientist Darwinism and evolution are not synonymous. The former is but the biological portion of the latter, and accordingly a subdivision of the general theory. But it frequently happens that people with only a bowing acquaintance with modern natural science, or who possibly get their ideas along these lines chiefly from the popular magazines, will see it stated by some good authority that scientists have rejected or outgrown Darwinism, and they begin to rejoice that what they regard as an antichristian theory has been overthrown, and in speaking of the matter (or worse still, even in writing about it) they will affirm that the evolution doctrine is now discredited or repudiated, and they do not see how they are giving a wrong or wholly false impression.

What Darwinism Stands for Only

Even the term "Darwinism" is often used in quite distinctly different senses. Properly speaking it should be used only as referring to Darwin's private patent, the theory of natural selection, as an alleged explanation of how the various types of plants and animals probably originated in the long ago from other different, and probably less developed, forms of life. But the term is also used, rather carelessly, perhaps, as referring to the theory of the ape origin of man. And it is a singular fact that many scientists of today even hold to the theory of the ape origin of man, while rejecting Darwinism entirely as an explanation of the alleged process. As an example of this, we might mention Mr. John Burroughs, the well-known naturalist and litterateur, who in a recent article speaks of Darwin's having been "shorn of his selection doctrines as completely as Samson was shorn of his locks" (*Atlantic Monthly*, August, 1920, p. 237). But Mr. Burroughs is still a very staunch believer in the theory of the ape origin of man; he aims to keep abreast of modern scientific discoveries, and accordingly he could not fail to realize that Darwin's special theories have long since been discredited by the discoveries of such men as Weismann and Mendel and their modern followers.

But religious leaders are liable to get into serious difficulties with their hearers or their readers, if they quote such statements as this from John Burroughs as testimony to the supposed fact that modern scientists are now repudiating the evolution doctrine, or even the doctrine of the ape origin of man. For the fact is that both these doctrines are still very much alive, and are more widely believed and taught today than ten years ago or five years ago.

Darwinism Refuted by German Scholars

We have grown accustomed to the idea that most of our false doctrines have come to us with the stamp upon them, "Made in Germany." And while it is true that the general scheme of evolution had been taught in Germany under such philosophers as Fichte and Hegel long before the days of Darwin's "origin of species," it should also be noted that the scientific refutation of Darwinism has also come to us chiefly from two men of German descent, August Weismann of Germany, and Gregor Mendel of Austria.

Weismann's contribution to this discussion was in proving that acquired characters are not transmitted in heredity, only characters born with an individual can be passed along to the next generation. When this doctrine was first propounded it was very strenuously opposed by many leading evolutionists, Herbert Spencer declaring that "either there has been inheritance of acquired characters, or there has been no evolution." Haeckel also affirmed that "belief in the inheritance of acquired characters is a necessary axiom of the monistic creed," and admitted that, rather than agree with Weismann, "it would be

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better to accept a mysterious creation of all the species, as described in the Mosaic account." But today the battle has long since been over, and all biologists admit the total absence of observational proof that acquired characters are transmitted in heredity.

This triumph of Weismann occurred some twenty years or more ago, but it left wholly untouched the central theory of Darwin, which was that slow variations are constantly occurring, and that natural selection tends to perpetuate those chance variations which happen to be more "favorable" than others. But what has come to be known as Mendelism, or Mendel's laws, have given us such a detailed and revolutionary view of the actual processes by which hereditary characters are passed along, that there is really no room left for such a theory as that of Charles Darwin.

And thus it comes about that biologists are almost universally agreed that in the light of Mendel's laws we are still wholly in the dark as to how really new species can be produced, unless possibly the chromosomes or carriers of hereditary qualities may become changed in some unknown, mysterious way, a process which is wholly unproved and, to say the least, highly problematical.

New Origins Not Explained by Natural Selection

That portion of the general evolution doctrine which was refuted by August Weismann is generally known as Lamarckism, being the theory advocated by Lamarck a century ago, that changes of environment and all kinds of acquired characters are quite faithfully passed along to the next generation. Charles Darwin had accepted this teaching of Lamarck, but had added his own improvement of the general theory in the form of natural selection.

Thus it came about that when Weismann exploded the Lamarckian features of the theory, the peculiar and specific doctrines of Darwin himself were still left wholly untouched. Thus some two decades or more ago we used to hear a good deal about "pure Darwinism," meaning of course the theory of natural selection as the one and only cause of the origin of new species. But today, in the light of the discoveries of Mendel, and our modern methods of experimental breeding, the "purer" the Darwinian theory is in the above sense the worse it is off; for it is now seen that natural selection offers no explanation whatever of how new unit characters or factors can originate.

Biologists Still Believe in Evolution

A more detailed statement of what we actually know now about the problems and methods of heredity in the light of Mendel's laws, will be given in a subsequent article. Here it will be sufficient to note the curious and in some respects astonishing fact that, while Mendelism completely discredits Darwinism, and while indeed every biological attempt, whether by experiment or by observation, to explain how one species or kind can become changed over into a wholly different species or kind, has completely and hopelessly failed, yet practically all biologists still believe in evolution somehow; and the general view of the growth of the higher forms of life and of man himself up from the lower forms of life, was never so popular or so widely held as at the present day.

The Basic Idea in Geology

All this would indicate that there must be some fundamental or basic idea back of all this discussion about species which has never yet been touched by any of these discussions. This primary or basic idea which lies back of Darwinism is indeed readily recognized in the commonly accepted notions of geology, with its long succession of life forms in a steadily advancing series from the lower forms of life up to the higher forms, including man himself.

For it is impossible to study this long series of the fossil forms from the lower to the higher, which geologists have always said took place in a regular chronological order, without having the conviction borne in upon our minds that a growth of the higher forms out of the lower forms in some way or other would seem a more reasonable supposition than to suppose that each succeeding type of life, though often resembling the preceding forms more or less, was really created *de novo* by a special act of the Creator.

Wallace and the Ape Theory

Of course, it is well known that Alfred Russel Wallace, the co-inventor with Darwin of the natural selection theory, always balked at the idea that man had really grown up from the apes. Wallace held that though man had inherited his body from the apes in a certain sense, yet really there are capacities in not only the mind and soul of man, but even in his physical form which could not possibly come to him solely from his brute ancestors.

Indeed, Wallace used to point to certain muscles in the hand or foot of man, or in his vocal organs, which are wholly unused by the lowest types of savages, and he argued from the presence of these organs that man must have been originally endowed with capacities above anything that he could have merely inherited from the lower animals.

Doubtless there are still some scientists, as we know there are many religious teachers, who thus postulate a more or less special creation for man, while admitting the general theory of evolution for all the other types of life. But it must be admitted that such a course is at the expense of consistency, while it remains a fact that multitudes of intelligent people

in our day feel as confident of the general truth of the biological theory of evolution, including the ape origin of man, as they are confident of the rise of the tides or of the rotation of the earth on its axis.

Recent Geological Discoveries Change Things

Now while the recent discoveries in geology, which put a wholly new aspect upon this feature of the general evolution theory, will be given in a subsequent article, and while these modern geological discoveries tend to remove bodily the whole geological basis on which any possible scheme of evolution could ever be built up, we must here content ourselves with noting briefly the general contrast between the theory of evolution, considered in its broadest aspects, and the doctrine of a literal creation.

What "Uniformity" Means

For the fact is that creation and evolution are exact opposites. The essential idea of the evolution doctrine may well be expressed in the one word, "uniformity." That is, this theory undertakes to explain how life in all its various forms probably originated and developed by causes similar to, or identical with, forces and processes now prevailing.

It is founded on the absolute supremacy during all past time of those natural laws which we observe now in operation around us. It declares that certain changes alleged to be now in operation have always been in action, and that these present day natural processes are as much a part of the origin of things as anything that ever occurred.

In other words, evolution as a philosophy is an effort to obliterate, or smooth out, all distinction between creation and the ordinary every-day processes now going on under the reign of natural law.

How "Creation" Differs

On the other hand, the essential idea of the doctrine of creation is that, back at some period called the "beginning," powers and forces were exercised and results were accomplished that have not since been exercised or accomplished.

In other words, by the acount of creation as given in the Bible, as well as by the doctrine of creation when considered in its philosophical aspects, the origin of the first organic forms, and indeed of the whole world, was essentially and radically *different* from the ways in which these forms of life are propagated and the world is sustained today.

However, *time* is in no way the essential idea in the problem. The question of *how much time* was occupied in the work of creation is of no importance, in the logic of the case, neither is the question of *how long ago* this creation took place. The one prime essential of the doctrine is that in its very nature creation is wholly inscrutable; we can never hope to know just how it was accomplished; we cannot expect to know the process or the details, for we have nothing in our modern world with which to measure it.

The one essential point in the doctrine of creation is that the origin of our world and of the things upon it came about at some period of time in the past by a direct and unusual manifestation of divine power; and that since this original creation, other and quite different forces and powers have prevailed to perpetuate and reproduce the forms of life and indeed the entire world which was then called into existence. In short, both in the Bible and in sound philosophy, creation *is a completed work and is not now going on.*

What Would Be Required to Prove Evolution

But in view of the definitions which we have given for both the evolution theory and the doctrine of creation, we can easily see the way in which the one or the other could be established by the discoveries of modern science.

The theory of evolution might be established, if it could be shown that *matter*, or the stuff of which the world is made, could be produced *de novo*, that *energy* can be created or increased in amount by machines or other mechanical contrivances, that *life* can by experiment, or in the natural course of nature, be produced from the not-living, and that *new and distinct forms of life*, which are commonly called new species, could be produced under scientific observation in our own day.

In this way the present order of nature might be considered as sufficient to explain the origin of all things, and all the forms of life might be regarded as having been brought about by the ordinary operation of natural law.

What May Be Proved for the Creation Theory

On the other hand, it would really constitute a scientific demonstration of the historical reality of a real creation at some time in the past, if we have proof from modern science that the forces and processes now in operation can never account for the origin of anything; that matter, and energy, and life, and the various forms of life, must all have had an origin essentially and radically different from anything now observed to be taking place in our modern world.

But, for anyone acquainted with the modern scientific situation, the mere statement of these conditions of the controversy is sufficient to show that the evolution doctrine may now be considered as hopelessly bankrupt, while its antithesis, the doctrine of creation, may rightly be regarded as scientifically established, in so far as modern discoveries can be expected to settle such a controversy.

PART II

Putting New Wine into Old Bottles

IN the previous article we saw how modern biological discoveries have put a new appearance upon the old problems of variation and heredity, so new that a scientist like John Burroughs can say of Darwin, that, "he has already been shorn of his selection doctrines as completely as Samson was shorn of his locks" (*Atlantic Monthly*, Aug. 1920). And we have seen that this situation has been brought about largely as the discovery of what is known as the principles of Mendelism. This in itself is interesting, but it is a large subject; and it will be well to leave biological matters over for another article, in which we hope to show how the new knowledge of the physical basis of heredity has discredited all those theories which have passed for the scientific gospel according to Darwin.

How Account for Evolution Today?

But in our previous article we also noted that practically all scientists are still believers in evolution somehow, although the biological basis for the theory has been destroyed. This persistence of the scientific world in holding to a general belief in the development of plants and animals from the lower forms up to the higher forms can be accounted for in one of two ways: Either they have learned their lesson from Darwin all too thoroughly and still persist in holding to a belief without any scientific foundation, or there must be something back of and underneath the biological phases of the question which still governs their thinking, and keeps alive in the minds of scientists a latent belief in a development in some way from the lower and less organized, to the higher and more organized types of life.

But of these two alternatives, I do not think the first is a sufficient explanation of the situation. I believe that scientists in general are anxious to know the truth, and are not so hypnotized by the prestige of illustrious names as to hold to a theory blindly and in the face of scientific evidence that contradicts it. On the other hand, I believe that we do have something back of the biological phases of the question which still holds the world in bondage to a general belief in some recondite form of evolution, even though the biological clues have all run out. The biologists realize that they have been following up a blind trail, and find themselves now in a *cul-de-sac;* and just at present they are frantically endeavoring to come back again upon the main trail. But they still believe that the main trail will lead to some demonstration of the general fact of biological evolution.

The Present Idea Back of It

This idea back of and underneath all our biological studies, which has served for so many generations to perpetuate a belief in some form of evolution, can be identified as the general scheme of the geological succession of life, a succession from the little to the big, and from the less developed to the more highly developed, prolonged over uncounted millions of years. As Huxley declared that Sir Charles Lyell "was the chief agent in smoothing the road for Darwin; for consistent uniformitarianism postulates evolution as much in the organic as in the inorganic world" (*Life*, vol. I, p. 168); so we see now that the world in general can never be convinced of the falsity of all schemes of evolution, unless these geological theories are fairly and openly met and disposed of.

Accordingly we now inquire, What is the situation in the geological field? Do we have any more evidence than they had fifty years ago along this line? Are we still at the logical cross-roads where Huxley stood when he declared that Lyell and his geology had smoothed the way for Charles Darwin and his biological theories? In other words, has our knowledge of geology kept pace with our developing knowledge in other lines of science? This is a large subject, and for a complete statement of the present situation I beg to refer the reader to my *Fundamentals of Geology*. But a brief outline of the present geological situation must be here attempted.

Two False Assumptions of Geology

There are two prime postulates underlying the work of Charles Lyell and modern geology, for modern geologists are still the devoted followers of Lyell and his uniformitarianism. These two basic ideas are in reality both assumptions, adopted without proof, or with the slenderest kind of proof. The first of these—or really the second, if considered from the point of view of the history of the idea—is the theory of uniformity, the theory with which the name of Charles Lyell is chiefly associated. This theory assumes that all the geological changes of the past are explained as due to causes similar to or uniform with those processes in the air, or on the land or in the sea, which are in every-day operation in our modern world.

The second is that there has been a long succession of various types or groups of life in a definite and precise order, some having lived all over the world at certain ages, and having all died out and having been followed by other groups of

life, this succession of life having been prolonged over uncounted millions of years. This latter idea had been taught decades before the time of Lyell, and he merely attempted to show how these long successive ages might have occurred, and might have blended into one another as a continuous process of geological development, according to his postulate of uniformity.

I have called these two ideas both assumptions, uniformity in reality assuming the very thing that should be proved, or what should be the chief object and aim of all geological inquiry, namely, How did the geological changes take place?

But the succession of life idea is also virtually an assumption, being based wholly on the order in which the fossils were found in certain parts of France and Germany and England, and assuming that they must always be found in this same relative order all over the rest of the world. As I have shown elsewhere, this idea also involves the assumption that in any particular geological age there were really no such phenomena as biological zones or districts, but that one type or assemblage of plants was universally spread around the whole world. But this biological form of the old onion-coat theory is not a whit better than the mineralogical onion coats of Werner, a theory which the scientific world laughed out of existence a hundred years ago.

Discredited on Several Counts

Had I the space I might show how the uniformity doctrine has been discredited on several different counts. The vast fund of information obtained as the results of the "Challenger" Expedition (1872-76), has taught us that most of the processes which Lyell and his followers assumed to be now going on in the deep seas and oceans are really not in operation anywhere.

Then too, such writers as Professor Eduard Suess and Sir Henry Howorth have disposed of the myth that changes of land and sea level are all the time going on in various parts of the world. There is no modern analogy of a constant exchange of land and water, such as the theory of uniformity requires.

Moreover, on every continent, and in almost every country on each continent, there are found immense deposits where the fossils occur in such enormous numbers, and often in such a state of exquisite preservation, as to constitute evidence impossible to be misunderstood, that these deposits must have been made by some wholly abnormal or uncommon action of the elements. The evidence of a formerly mild and spring-like climate which once extended over the whole globe, including the polar regions, has been obscured by the wild theory of a "glacial age," assumed to have occurred between the mild climate of the older deposits and our modern era. But this myth of an ice age has been effectually disposed of by Sir Henry Howorth in *The Mammoth and the Flood; The Glacial Nightmare and the Flood* (2 vols.), and *Ice or Water* (2 vols.).

As Professor A. H. Sayce once remarked in a personal letter to myself, "These works of Howorth have never yet been answered by orthodox geology; and until such answer is forthcoming we are obliged to believe that glacial ice could not possibly have done the work attributed to it, but that these so-called 'glacial' deposits were really formed by water in sudden and violent action.

"Thus, on all these counts (and several others might be given), the doctrine of uniformity has been discredited even in the house of its friends; but until the theory of the successive ages could be understood in a new light, the true meaning of the abnormal action found revealed in almost every rock deposit hitherto discovered, could not be understood."

The criticism of the theory of the successive geological ages is my personal contribution to the general discussion of this subject, and as already intimated, the details of this argument will be found in my published works. Three only of the arguments along this line can be attempted here.

I

"Skipping" the Ages

The geologists have had all the freedom offered by a card index system for arranging the rock deposits according to their will. But in spite of this freedom in assigning each of the various deposits to its appropriate "age," very many genera of plants and animals, even whole tribes or phyla, are found as fossils only in the so-called "oldest" rocks, and have skipped all the rest, though found in comparative abundance in our modern world. Many other kinds have skipped from the middle of the geological series down to the modern, while it is a common thing for other types of life to skip large sections of the geological series.

These facts indicate that there must be something wrong with the common arrangement of the fossils. But it is equally evident that these absurdities would be avoided if the common distinctions as to the age of the various fossils are remembered to be purely artificial, the geological series being regarded as merely an old-time taxonomic or classification series of the life forms of the older world.

If all the dogs now living on the earth were found buried as fossils, we could

similarly arrange them in a series from the little King Charles spaniel to the St. Bernard, and have just as good a chronological series as the geological one, both being a purely artificial arrangement, but convenient for purposes of classification.

II

Who Disarranged the Fossils?

It is a common thing to find what are called very "young" beds (that is, containing "young" fossils) lying on top of other beds ticketed as much older, with the two series of beds, however, in such perfect conformability that the vast period of time alleged to be intervening between them is unrepresented either by deposition or erosion.

It is as if nature had closed shop, or put an injunction on further action of the elements for several million years, and everything had to continue in *statuç quo* for this long interval, the waters neither wearing away nor building up over any part of the taboo areas.

As I have said, these phenomena are common, and found throughout all the geological "ages" and in all parts of the world. In many instances, too, these age-separated rocks are so much alike in structure and in mineralogical make-up that, to quote the words of a prominent scientist, "Were it not for fossil evidence, one would naturally think that a single formation was being dealt with" (McConnell); while these strange conditions are "not merely local, but persistent over wide areas" (Sir A. Geikie), so much so that "the numerous examples may well be cause for astonishment" (Suess).

Another enlightening fact is that these conformable conditions of what are called age-separated strata are often repeated over and over again in the same vertical section, the same kind of anachronistic bed re-appearing at intervals with other beds of an entirely different "age," "as if regularly interbedded" (Sir A. Geikie) with them in a series of strata that has obviously not been disturbed.

These facts of course tend to show that the distinctions commonly made as to age between the various fossils must be purely artificial, and cannot be true.

III

What the Rockies Disclose

In numerous instances recently come to light, we have large areas, hundreds or even thousands of square miles in extent, where some of the "oldest" rocks are found lying on top of some of the "youngest," with every appearance of natural conformability, in other words, looking as if laid down in an order exactly contrary to the theory of successive ages.

One of the largest areas of this kind is just east of the main divide of the Rockies, occupying considerable parts of Alberta and Montana, and covering anywhere from ten to fifteen or twenty thousands of square miles.

Here Algonkain, or Pother Paleozoic strata are found on top of soft cretaceous shales, the former being classed as among the oldest rocks on earth, and the latter as almost the youngest. But these two sets of beds, wherever exposed sections can be examined throughout this area, look exactly as if they had been really deposited in the order in which we find them, a well-known government geologist remarking of the line of contact between the upper and the lower beds in one locality that it "acts exactly like the line of contact of two nearly horizontal formations," and in a natural section cut out by a river the two sets of beds, he says, "appear to succeed one another conformably."

Examples quite similar have long been known in the Swiss Alps, the Grampians in Scotland, the Appalachian Mountains, and elsewhere; but only recently have other wide areas in the Rocky Mountain region been properly examined. But now we have what the geologists term the "Bannock overthrust," occupying a large area in southeastern Idaho and northeastern Utah, with an even more remarkable area called the "Heart Mountain overthrust" in and near Park County, Wyo.

Just at present geological journals are full of discussions regarding these remarkable conditions; but though the facts of the relative positions of the rocks are undisputed, very few modern geologists seem to realize how they wipe out as with a sponge the whole theory that the rocks always occur in a certain definite and invariable order of sequence.

No Basis for Biological Evolution

The fact is, we really find the rocks in every conceivable order of sequence, so far as the fossils are concerned. Indeed, these discoveries have now established it as a scientific law, which I have called elsewhere the *law of conformable stratigraphical sequence*, namely, that *any fossiliferous bed, "old" or "young," may be found occurring on any other fossiliferous bed, "younger" or "older."*

Thus it is evident that the distinctions as to age between the various geological deposits are purely artificial, and without any scientific basis of fact, and all theories based on such supposed distinctions become of no value whatever. From which it further follows that geology cannot furnish any basis in the way of a chronological outline on which to construct a scheme of biological evolution. As Lyell and his geological theories were "the chief agent in smoothing the road for Darwin," so now we see that the modern bankruptcy of Lyell's geology both in its doctrine of uniformity, and

in its doctrine of successive ages, has destroyed apparently every foundation upon which a scheme of biological evolution could really be constructed.

The Deluge Historic

If I am asked now what all these things mean, I reply in brief that we seem to be back to the doctrine of a universal deluge as the best explanation of the geological phenomena.

Of course, the Deluge must have been a more extensive affair than we have usually considered it; but it seems to me, and I speak as one who has made this subject a study for twenty years, that the hypothesis of a universal deluge offers by far the simplest explanation of the facts as we now know them. I do not intimate that all scientific difficulties are solved by this hypothesis; but I mean that what difficulties are still remaining are few and insignificant compared with those of any other geological theory hitherto proposed.

For many decades the Christian church has been in a quandary as to how to meet the discoveries of modern science. The succession of geological "ages" has been taken at its face value, and harmony between this theory and the record in Genesis has been attempted, either by supposing that these "ages" had taken place before the real creation of our present world, or by supposing the days of creation to be merely long periods of time, corresponding to the geological "ages."

Both of these theories have labored under serious difficulties both geological and scientific. These difficulties need not be enumerated here. But any one acquainted with the discussion during the last two generations cannot fail to have noted that these two attempts at harmonizing geology and Genesis, have proved inadequate; nor can we avoid the conviction that the failure of these explanations has proved a serious obstacle in the way of an intelligent belief in the first chapters of Genesis as a record of actual fact. But in view of the facts as we now know them how much simpler it would be to return to the position commonly held seventy-five or a hundred years ago, namely, that the universal Deluge must have been the cause of the chief geological changes. Without indulging any unkind feeling of "I told you so," it is evident that the church is today in a position incomparably stronger scientifically than was considered possible a decade or two ago.

The reader will find the matter covered in my *O. E. D., or New Light on the Doctrine of Creation* (Fleming H. Revell Co, New York).

PART III

AS a geologist, I have often been astonished at the confiding, child-like trust with which zo-ologists and other scientists accept what geologists tell them about the age of the various types of fossil life.

In the preceding article I have told some things which are not generally known, but which are well known to my fellow geologists, whether my colleagues agree with my interpretation of the facts or not.

But in the light of what we now know about the questionable theories relating to the relative ages of the fossils, the whole matter of the development of life assumes a different aspect; and I claim that the hypothesis of a universal deluge offers the best explanation of the facts.

And this, of course, is in addition to and apart from the fantastic way in which the various successive ages were first assumed by geologists and then treated as an actual fact, with the result that all other scientists still unquestioningly accept the dicta regarding the age of any given fossiliferous deposit.

How Qualities of Living Things Are Passed Along

In this article, however, I give an outline of what modern biological science teaches regarding the facts and the methods by which the various qualities or characters of living things are passed along by heredity to the next generation.

The question can be best considered by a brief study of what is known as Mendelism, for the discoveries along this line have completely revolutionized our notions regarding heredity which were held even so late as twenty years ago. Indeed, as William Bateson remarks: "Had Mendel's work come into the hands of Darwin, it is not too much to say that the history of the development of evolutionary philosophy would have been very different from that which we have witnessed" (Mendel's *Principles of Heredity*, p. 316).

The Discovery of the Austrian Monk

Gregor Mendel was an Austrian monk who experimented chiefly with the common garden pea (*Pisum sativum*), and who published the results of his investigations in the transactions of a local scientific society in 1865.

Nobody at that time seemed to give any attention to his experiments, and although he used to say, "*Meine zeit wird schon kommen*," he died without the world at large knowing anything about him.

But in 1900 his work was brought to the attention of the scientific world, and since then the principles he worked out have been the guiding principles of modern biology.

And these principles are manifestly much more than a passing scientific fad such as biology has often witnessed; rather we must say that they are manifestly rock bottom facts, and future discoveries can be expected to do no more than amplify and illustrate them.

Two Kinds of Peas

Mendel differed in his methods from all previous investigators in that he concentrated attention each time upon some pair of contrasted characters, giving no attention to other characters which might be present. Thus when he crossed a tall pea with a dwarf, giving attention to this pair of contrasted characters alone, he found that all the first hybrid generation were always talls, with no dwarfs and no intermediates.

Accordingly he called the tall character *dominant*, and the dwarf character *recessive*, and a pair of contrasted characters which act in this way are now called *unit characters*, or *factors*.

But on allowing these hybrid talls to mix by cross fertilization in the usual way, Mendel found that in the next hybrid generation there were always three talls to one dwarf out of every four. By carrying the experiment further it developed that these dwarfs of the second hybrid generation always bred true afterwards, proving to be just as purely dwarfs as if bred from a long line of pure dwarf stock.

One out of the three talls likewise would always breed true, thus making another quarter of the total; while the remaining fifty per cent proved to be mixed talls, always acting as the first generation of hybrids, splitting up in the next generation with the same mathematical regularity.

These experiments have been verified over and over again, and any one who wishes may repeat the experiments for himself, with the utmost confidence of getting the same results.

Of course, these relative percentages will not always appear when dealing with small numbers of individuals, but when large numbers are handled the proportion will be found to be correct.

The following diagram illustrates the principles:

Accordingly, if we confine ourselves to these two contrasted characters or alternative characters, tallness and dwarfness, we see that just three kinds of peas exist, namely, dwarfs which breed true; talls which breed true; and mixed talls which always give the same definite proportion of talls and dwarfs among their descendants.

And in crossing a tall with a dwarf it makes no difference from which plant we take the pollen, that is, it makes no difference which is the male and which is the female in such an experiment; the results are always the same.

Innumerable repetitions of similar experiments have proved that these principles hold good throughout the whole world of plants and animals, and the results which follow these methods of hybridizing are now known as Mendel's laws.

But further study has shown that these principles hold true in all instances of *normal* breeding also, that is, that the same duality exists in the normal animal or plant, the hybrid being merely a case where this duality can be made visible or prominent.

Generating a Pink Flower

If we take a white and a red four-o'clock (*Mirabilis jalapa*), the first hybrid generation will be pink, which is a color intermediate between the white and the red, evidently produced by neither of the original colors being dominant over the other.

In the second hybrid generation, however, we have twenty-five per cent pure bred whites, twenty-five per cent pure bred red, while fifty per cent will be hybrid pink.

Very similar results are obtained by crossing pure bred black Andalusian fowls with pure bred white. In this instance the first hybrid generation are called blue by poultry fanciers; but when these are allowed to interbreed, one quarter of their offspring will be white, which will breed true ever afterwards; one quarter will be black, which will breed true; and fifty per cent will be hybrid blue, which will break up in the next generation in the very same way as before.

Professor Morgan of Columbia

Among the most extensive and exact experiments along this line are those by Thomas Hunt Morgan, of Columbia

	1st Hybrid Generation	2nd Hybrid Generation	3rd Hybrid Generation	4th Hybrid Generation
TALL PLANT	100% mixed talls	25% pure talls	= 100% pure talls	= 100% pure talls
			25% pure talls	= 100% pure talls
		50% mixed talls	50% mixed talls	25% pure talls
				50% mixed talls
				25% pure dwarfs
DWARF PLANT		25% pure dwarfs	= 25% pure dwarfs	= 100% pure dwarfs
			= 100% pure dwarfs	= 100% pure dwarfs

University. For nearly ten years he and his staff have been experimenting with the wild fruit fly (*Drosophila ampelophila*) and other related types.

During this time they have seen over a hundred and twenty-five new types originate under their eyes, all of these types breeding true according to Mendel's laws. Every portion of the body of the fly and of its appendages has been effected by one or another of these changes. The wings have been shortened, or greatly changed in shape, or eliminated entirely. The eyes have been changed in color, or made to disappear entirely. And each of these wonderful variations was brought about not gradually, as Darwinism would have done it, but at a single step.

One cannot fail to sympathize with Professor Morgan in his sarcastic references to the arm chair theories which have so long and so harmfully dominated our biological studies, but which are now so completely refuted by these laboratory facts. The following quotation is to the point:

"I may recall in this connection that wingless flies also arose in our cultures by a single mutation. We used to be told that wingless insects occurred on desert islands because those insects that had the best developed wings had been blown out to sea. Whether this is true or not, I will not pretend to say; but at any rate wingless insects may also arise, not through a slow process of elimination, but at a single step. Formerly we were taught that eyeless animals arose in caves. This case shows that they may also arise suddenly in glass milk bottles by a change in a single factor" (*A Critique of the Theory of Evolution*, p. 67).

Character Carriers

Some wonderful things have been discovered regarding the behavior of the parts of the sperm and the ovum which are now known to be the carriers of hereditary characters. These carriers are the *chromosomes*, which are small thread-like portions of the nucleus of the cell which can be watched under the microscope during the processes of cell division, reduction and fertilization.

Each type of plant or animal seems to have a definite number of these chromosomes, though usually they constitute an even number, such as six, or fourteen, or twenty-four.

Before fertilization, both the sperm and the ovum undergo some complicated changes which need not be described here, but which result in the original number of chromosomes being reduced in number to *exactly half the original number* for the species. And thus when the ovum and the sperm unite, each contributing one-half the number of chromosomes, the normal number for the species is then restored.

What is known as Mendel's second law relates to what would seem like the origin of a wholly new type. For when races are crossed each of which differs from the other in the possession of two contrasted characters, two being dominant and two recessive, it is obvious that further complications will result.

In this case, out of every sixteen specimens, nine will show a combination of the two dominant factors, one specimen will show both recessive factors, while the six remaining specimens will show two distinctly new types, three of one kind and three of another.

Thus, if we cross tall yellow peas with dwarf green peas, the first hybrid generation will be all tall yellows, both tallness and yellowness being dominant. But in the second hybrid generation, out of every sixteen plants, we have nine tall yellows, one dwarf green with three *dwarf yellows*, and three *tall greens*, the last two kinds being wholly new forms, which are thus called *mutants*, and which by further experiments will prove to be pure lines breeding true thereafter.

No Evolution in the Darwinian Sense

When mutants were first produced they were acclaimed by enthusiastic biologists as "elementary species," on the supposition that we had here an example of how wild species have probably originated.

However, the first enthusiasm over these "new species" has long since subsided; for it turned out that although these new forms will breed true indefinitely when kept in pure lines, yet they are nevertheless *cross-fertile with the original forms;* and thus the circle can be completed back again at any time, by a return to the parent type, from which the "new species" can again be produced at will with the same precision as before.

In other words, what might be termed new types, or mutants, can be made at will according to Mendel's laws of heredity; and when we have made them once we can always be sure of producing the same mutants again in the same way, as surely as we can produce a definite chemical compound.

And when we have made a new form or mutant, we can always by back-crossing resolve it at will into its original form or separate it into its component factors, just as we can with a chemical compound.

Accordingly, where is the progress or the evolution in the Darwinian sense? Or how do these facts throw light on the origin of species, any more than chemical analysis explains the origin of the elements? Obviously, in biology as in chemistry we are only working in a circle, merely marking time.

And this is about the view that all

intelligent biologists are now taking of the present situation, at least this is true of those most closely in touch with genetic and experimental breeding.

Some, it is true, are still groping about for some hidden way by which new qualities or characters can be added to the chromosomes before fertilization takes place; but here again they find themselves up against a stone wall, with no view beyond; for it has long since been definitely settled that *acquired characters are not transmitted in heredity.* This means that changes in an organism which have been brought about by environment, or by use and disuse, are never transmitted.

Herbert Spencer's Admission

When this doctrine was first brought forward by Weissmann, and supported by Wallace, Lankester, and others, some men, such as Herbert Spencer and Ernst Haeckel, were emphatic in arguing for the *necessity* of supposing the transmission of acquired characters in order to save the theory of evolution.

Thus Spencer declared, "Either there has been inheritance of acquired characters, or there has been no evolution." Haeckel also said that "belief in the inheritance of acquired characters is a necessary axiom of the monistic creed;" and he further declared that rather than agree with Weissmann in denying the inheritance of acquired characters, "it would be better to accept a mysterious creation of all the species as described in the Mosaic account."

But today the battle has been fought and won. The Chinese have been binding the feet of their little girls for centuries; but the fact that they have to keep doing it with each generation is proof that the babies are born with normal feet.

The Japanese have been growing strange dwarfed trees; but the seed from these trees will not produce dwarfs; each new specimen has to be dwarfed by a process just as was first done.

A potato that has been badly sunburned will not produce a sunburned potato if properly covered.

Thousands of experiments have been performed or studied by scientists, and all agree that the universal failure of these experiments to show that any acquired characters are transmitted is about like the failure of mechanics to invent perpetual motion.

Professor Morgan states the situation in the following words: "Today the theory (of the inheritance of acquired characters) has few followers among trained investigators, but it still has a popular vogue that is widespread and vociferous" (*A Critique of the Theory of Evolution*, p. 32).

We may add that its popular vogue is in proportion to the *need* felt for this doctrine as a support of the theory of evolution, while the vociference of its advocates is inversely proportioned to the scientific evidence in its support.

John Burroughs on Darwinism

It was because of this failure to prove the inheritance of acquired characters, and also because of the failure of natural selection to account for the *first steps* in the supposed slow advance toward usefulness, that John Burroughs can now speak of Darwin's having been "shorn of his selection theories as completely as Samson was shorn of his locks" (*Atlantic Monthly*, August, 1920, p. 237).

Mendelism when it first appeared seemed like the opening of a new landscape. Biologists had already realized that they had been traveling up a blind alley, a *cul de sac*, and they felt that in Mendelism they were at last in fresh touch with reality, and would be able by these new principles to work out the methods by which hereditary characters are transmitted.

In the latter expectation they have not been disappointed, for we have now demonstrated that the chromosomes, with their wonderful reduction to half the original number in maturation, and in their subsequent renewal of the normal number of the species, are the bearers of all the parental characters from both parents. But it is also seen that the principles of Mendelism give no promise of explaining how *new* characters can ever be acquired which were not already latent in the ancestry.

In other words, we see that the principles of heredity, as now understood, have brought us back to that great truth which is given in the first chapter of our Bible, that each form of plant or animal was designed by the Creator to reproduce only "after its kind."

Doubtless there have been variations in plenty among plants and animals, possibly variations within even wider limits than many have thought possible. But these variations have not been by haphazard or chance, as Darwinism has taught us; and it is now certain that the results of these variations cannot tend to accumulate in certain directions, and be passed along in ever increasing amounts from one generation to another.

Progression Downwards

Moreover, as Bateson has remarked, whatever variation there has been which has seemed to be of the nature of a progressive change has always come about by the *loss* of factors, and not by *gain;* and not much progress can ever be made with a system of evolution that progresses in such a down-hill fashion.

The effects of alcoholism and of venereal disease are transmitted in heredity, and in exact accordance with Mendel's laws. But these are the only diseased conditions which medical men

admit are thus transmitted, and both are plainly of the nature of degeneracy.

Certainly no one would point to these as proof of the inheritance of acquired characters in the technical sense of this term, though both are examples of variations produced by loss of factors and not by gain.

To sum up, it is evident that a new day is dawning for the church in her relationship to scientific problems.

Were it not that a thousand glib speakers and facile writers have confused the Christian world with a multitude of false theories and false issues, these modern discoveries of true science would do much toward clearing up the bewilderment that has existed in the minds of those who have always believed that the book of nature and the written Word must always agree when both are properly interpreted.

But in spite of the confusion which now exists, it is evident that the new light we now have on biology, to say nothing of the light also acquired from such subjects as geology and radio activity, ought to be used by religious leaders everywhere in reassuring the people who have become confused by the arrogant claims of "science falsely so-called."

For, as has already been remarked, these new views which we now have as a strong aid to our faith, are not mere passing fads or scientific curiosities, they are the fundamental teachings of modern science, acquired only after decades of painful study and research; and they are so firmly grounded in objective facts that it is not likely any future discoveries will disturb or unsettle them.

A New Day Dawning

Thus a new day of opportunity is dawning for the church of Christ. On other occasions it has happened that a new step in scientific knowledge has had to wait a generation because it was in advance of its time, or because scientific progress in other departments had been so far behind, that the world has not been prepared to understand the new knowledge.

But now the world has been prepared. The stage has been set for a new and close up view of nature in her most sacred laboratory; and to a world tired and sick of vain speculations now comes the old familiar statement, but this time proclaimed by nature herself in corroboration of that written Word which has come down to us through the centuries, "In the beginning God created the heavens and the earth."

"There is one thing stronger than armies, and that is an idea whose time has come." The time has certainly come for a better understanding of the book of nature, God's oldest testament, and for a removal of all occasions of misunderstanding between the teachings of the book of nature and God's written Word. For as these two books have had the same Author, they must obviously agree with each other.

"Fortis est veritas, et praevalebit."

Moody Monthly

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GOD'S CREATIVE FORETHOUGHT
Arthur I. Brown
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Does Modern Science War on Religion?

By Dudley Joseph Whitney, B.S., (1883–1964)

THERE should be no war between true science and true religion. If conflict exists, one or both are partly wrong.

Public welfare might be served if men and women followed a religion which was in fact unsound. Fear of the nonexistent might, for example, result in customs more beneficial than injurious, but in this day it seems to be agreed that the truth is what is needed and if truth overthrows religion, the religion it overthrows ought to be overthrown. However, the question can be examined best by getting down to details.

Basic Concepts

First, one of the basic axioms upon which modern scientists build their theories is in conflict with one of the basic concepts in religion. This axiom is, that whatever happens is in accordance with natural law. Stated in another way, it is, that properties inherent in matter are responsible for whatever happens with matter.

A basic concept of religion on the other hand, is the existence of a God who is superior to matter and can control it in ways that transcend natural law. A religion may be conceived in which there is no God, except some impersonal law, but I think it will be conceded that such religion would be very weak and indefinite.

So far as existing religion is concerned it in the main deals with a God who can control matter; therefore, if a basic concept of religion is in conflict with a basic concept of modern science, there is war between modern science and modern (and past) religion.

Were Lepers Healed by Divine Power?

Take a definite illustration. The Christian world believes that nineteen hundred years ago there lived in Palestine a man who both in teaching and action showed divine power. He caused flesh eaten by leprosy to be restored clean and whole in an instant. He caused the deaf to hear, and inactive optic nerves to operate normally. This is believed by a large part of the American people and has been believed by most of the Western world hundreds of years.

None of these things can be called natural processes without doing violence to the meaning of words, but it is obvious that one cannot adopt the axiom that whatever happens does so in accordance with natural law, and then believe that lepers were healed by divine power and the blind given sight.

Doubtless the scientists would, with rare exceptions, recoil at the idea that they were destroying Christian faith, but it is undeniable that this concept of the universality of natural processes does in both theory and practice war on religion. As it happens, few persons are very logical, so a man can be a scientist and think he holds this axiom and still be religious, yet that does not keep the two concepts from being poles asunder nevertheless.

How was Man Created?

Take another illustration. The Christian world has believed that the first man was created outright, by divine power, without descent from lower animals. It has believed in a Garden of Eden, the coming of sin and a curse upon both man and the lower creation as a consequence. It has believed in a great Deluge, an ark and a Noah. It has believed in a law given to Israel through Moses with marvelous manifestations.

Modern science announces *ex cathedra* that the origin of man by miracle is contrary to possibility, that natural processes do not act that way, and that man did not originate that way. Those who wish to abide by science must therefore fit Christian faith to this dictum of science in any way they can. If they can, well and good; if they cannot, so much the worse for Christian faith. Just what will happen in another generation if this position of

science is kept as universally as it is now can hardly be estimated.

II

My second thesis is simply that modern science is wrong both theoretically and practically in this attitude. The thing can be viewed in two ways: philosophically and as a matter of absolute logic.

Take the first position. Many scientists are theists. It is fair to believe that this is not only because they had a religious training in youth, but because their observations as scientists impressed upon them the fact of God. Few persons will be so daring as to say that there is no God. For now, we shall assume the fact of God.

God is either composed of matter, which is to say, of electrons, and protons, and atoms and molecules, or He is not composed of matter. Well, it is obvious that, granting God, He will not be composed of atoms and molecules, combinations of oxygen, hydrogen, lime, and so on.

How Do You Play Checkers?

God, then, is different from these things. He can either control these things, or He cannot control them. Imagine, if you can, a God who is separate and distinct from matter, and yet who has no dealings with matter! As well try to play checkers when one player uses the black squares and the other the red squares. Imagine a universe where there is matter and God, who is a spirit, separate and distinct from the material composing this earth, but unable to direct the course of such material except by rigid laws ordained an eternity ago!

Many scientists, acting as philosophers and not in their proper office as scientists, announce their belief in God, but one who works by natural law alone. That is to say, He works inferentially, by having electrons and atoms act as electrons and atoms always act. Yet there is no way for God to act if electrons always act in the same way. That is having no God at all.

God is, or is not, a definite personality. He has a mind and can think and act, or He is some undetermined principle, without personality. It would be an amazing God which had no real mind and no definite personality! And it would be an amazing God who had a real mind and could not control matter. Therefore we will assume a God who has a real mind and can control matter.

God Controls the Home

If He controls matter it will be through the control of definite atoms, making them do what they would not ordinarily do in natural processes. If God could control one atom, or one group of atoms, one instant in eternity, He could and therefore can, control all atoms at all times. There is no intermediate position that will stand the test of logic between no God and an omnipotent God, philosophers to the contrary nothwithstanding. We therefore have to assume no God, or an omnipotent God, and having assumed the fact of God, in harmony with the convictions of many noted scientists, we must therefore agree that there is an omnipotent God.

The question then resolves itself into whether or not this axiom of scientists that natural processes alone have been used on this earth, is correct or not. This must be determined by observations, not by abstract theories. I assert that it is not correct; furthermore that its failure can be seen as a matter of pure logic and pure science, as well as a matter of philosophy. Even more, the right way to determine it is by pure logic and pure science, rather than by philosophy.

It is a basic principle of logic that no general, universal premise can be held without first having examined every case to which it applies. The central African might well have decided before Livingstone came that all men are black. Nevertheless all men were not black. The modern scientist may decide that natural processes only can be allowed, but he is committing a great fallacy if he has that as an axiom when there is good testimony of certain supernatural processes, like the healing of a leper, or the restoration of sight to a blind man by a touch or a word.

It is further my contention that all through this earth and in the heavens are facts without number which can be explained only by supernatural processes. The negro might have been excused for deciding that all men were black, for the observation of all his associates added to his own observation, showed many black men and none that were not black, but the scientists have not this excuse. Observations of the need of the supernatural are continually before their eyes, but they do not allow it because they insist upon forcing everything into the rule of natural processes only.

Thomson vs. Hutton

In his Yale lectures, *Concerning Evolution*, J. Arthur Thomson states his position clearly on theism when he says, "The relation of God to his world is plainly beyond man's understanding." He accepts the rulership of God, which is well and good.

But then he quotes James Hutton in a statement made a century and a half ago when the science of geology was beginning to take shape: "No powers are to be employed that are not natural to the globe, no action to be admitted of except those of which we know the principle, and no extraordinary events to be alleged to explain a common appearance."

Of this Thomson says, "How admirable is this sentence!"

Hutton here announces the dictum, "Natural processes only," and Thomson approves heartily, even though he has already acknowledged the fact of God. The science of geology has been based upon this dictum.

Yet, what if the extraordinary has occurred? Will the geologists allow that they have occurred, or will they hold their dictum, "Natural processes only," to be superior to their observations? Will they announce, "There may be a God, but He must have acted by properties inherent in matter and in no other way"?

What the Rocks Say

We find great sheets of sedimentary rock lying smoothly and seemingly undisturbed upon rock asserted to be ages younger. Surely such old rock never came to be upon younger rock without sign of any disturbance but uplift, except by a most extraordinary event?

They are accounted for by overthrusts, great side movements, often scores of miles in extent, on an earth whose core is rigid as a ball of steel. Surely such movements could not occur by natural processes!

Surely the leg of a tree shrew is not going to turn into the wing of a bat by anything that can legitimately be called natural process, nor will some descendents of that tree shrew change into whales by natural processes! By what right therefore can biologists announce that natural processes only can be allowed? The testimony of nature is against them; instances like these can be multiplied.

If God *is*, as many scientists assert, surely God can act on matter in a way that is supernatural, so there is no philosophical nor logical objection to the supernatural in the ordering of this earth and the plants and animals thereon. The scientist must be logical if he is to be a true scientist. He must base his conclusions upon observations, forcing his theories to fit facts and not the facts to fit his theories. When he sees—as he must—that natural processes are insufficient; that the extraordinary has happened time and time again, as a scientist he can only determine natural processes to the best of his ability, and then allow that there have been acts of an omnipotent Deity beyond human understanding.

Where the Real War Is

There is no war between true science and true religion, but there is an irreconcilable contradiction between the unscientific dictum of modern science that natural processes only can be allowed, and any and all religion. Modern science must change its attitude or the next generation will find that, to the extent that science has had effect in this way, it has destroyed religion. The axiom, that natural processes only must be allowed, and that properties inherent in matter are responsible for whatever happens with matter, is very bad science and very bad religion.

That dictum has led scientists astray seriously in earth history and in biology. Not only do I see the fact of an omnipotent God as good philosophy and good science, but I have become convinced that the New Testament account is good history and good religion; and if the New Testament is good history and good religion, the Old Testament scriptures must be reliable also.

Surely if God can create, He could have created our first ancestor outright; He could have made a universal or semi-universal deluge. Scientifically they are possible; unless natural processes only are allowed, and the real evidence is more for them than against them.

Meanwhile the fact stands that the axiom of natural processes only guides and controls scientific thought today, and guides it falsely. This is bad science, and when it conflicts with much religion, as it does, it makes modern science conflict wrongfully with religion.

"EVOLUTION AND RELIGION"

by S. W. Traum

THE September number of the *Ladies' Home Journal* contains an article under the caption, "Evolution and Religion." The writer of the essay is Harry Emerson Fosdick. I crave permission to say some things concerning it and him. References to him, however, are made only to the extent, and for the reason, that he injects himself into the discussion.

The essay has for its contention the compatibility of the evolutionary hypothesis with religion. Its first part deals with evolution; its second part, with religion. As a writer, nothing is wanting in the facility of expression and felicity of utterance. Furthermore, it is generally conceded that Mr. Fosdick is urbane, cultured, and withal of charming personality. Just why the article in question was sent to and published by the *Ladies' Home Journal* is not known to me. Motives back of the writing and printing we can not judge. It is only suspicion that prompts the judgment that the article is a part of a studied propaganda of evolutionists, and particularly so since the close of the Tennessee episode. Be that as it may, Mr. Fosdick has spoken, whether as one of the scribes, or as one who has authority, each must judge for himself.

If the evolutionary hypothesis is compatible with the religion of Christ, it is high time that some one should set himself to speaking the good word in its behalf. That there are some who have spoken, who accept the evolutionary hypothesis because they think that it is *not* in agreement with the Christian religion, is confessedly true. That out-and-out foes of Christianity have solaced themselves with the onslaught this hypothesis has made upon Christianity, seems not to be in doubt. So, if there is a champion for the Christian religion who can speak the irenic word, it is high time that he speak.

Mr. Fosdick thrusts himself into the article in its very first sentence. Reminiscently he alludes to his Freshman year in college as being the time that he contracted the malady of being an evolutionist. The disease, if the simile is admissible, has at length become chronic. His case, apparently, is at once grave and incurable. He says that it was in his Freshman year he first knew that he had it. "After the manner of young collegians, I was greatly impressed with myself," is the apt phrase he uses as he recalls that period in life. In that high state of elation and inflation, he wrote a letter home informing his family of his ecstatic frame of mind. He was apprehensive that the information would fall upon the home folk like a bomb, only to learn later that his shot was a "dud," for his father wrote the precocious son as follows: "Dear Harry: I believed in evolution before you were born."

We must accept this playful expression of his mood in writing as a sly bit of humor. Certainly he would not have us take it as being proof of his thesis. Under the circumstances there is hardly any more weight one might give to the father's *ipse dixit* than to the son's. The impression one gets from this glimpse into the family history is that they are all just naturally bright, for the son believed in evolution while in his Freshman year, and at a time when the evidence was not all in, nor had the professors in science of that day attained unto the degree of respectability that is imputed to modern professors, and the father, so said the son, had become an evolutionist even at a time when "there were still respectable scientific authorities that could be quoted against it," Agassiz being particularly mentioned as one of the notables.

So we must insist that Mr. Fosdick does not refer to this family trait as any part of his proffered evidence for the evolutionary hypothesis. On the face of the statements so far made, the argument is all the other way, for in this case "like produces like"—like father, like son. But the remark does serve as a foil, adroitly handled, for that later remark that the "last serious scientific opposition to evolution has disappeared," and in the van of these evolutionists marches the senior Fosdick, for he beat some of the latter-day scientists to it by many years.

As the caption of the article implies, and as we may judge from the discussion that follows, the author's intent is to show that there is nothing hostile to religion in the evolutionary hypothesis. Quoting Professor Thomson, Mr. Fosdick says: "Evolution is the only scientific way of answering the question, 'How has the present-day system come into being.'" This is hardly a definition. So Mr. Fosdick defines evolution as "the hypothesis that separate species came into existence by descent, branching off from older and simpler forms until all life, like a tree, goes back to some unicellular beginning." This, I take it, is a clear enough statement of his viewpoint, and, in fairness to him, we shall consider this as his definition.

For some reason or other, Mr. Fosdick seeks to unload Darwin, and that, too, right early in the discussion. In general, Darwin seems to have fallen upon evil days among all the biologists. Mr. Fosdick takes a whack at him, damns him with faint praise and concludes that evolution will stand, Darwin or no Darwin. Evidently there has arisen "a new king that knew not Joseph." The time was, within very recent memory, when Darwin was looked to as the high priest of the cult. His deductions were for long listed among the "assured results" of the researches among the scientists. But, says Mr. Fosdick, some biologists are for Darwin, some are anti-Darwin, and some are the middle-of-the-road Darwinians, but, whatever their tint or tincture, "all biologists are evolutionists." Acknowledging that Darwin's hold has slipped, Mr.

Fosdick says: "Darwinism could be utterly given up without affecting the standing of evolution. Indeed, it is fair to say that at this present time there never was such a unanimous agreement among competent judges as to the truth of evolution, and never such diversity of scientific opinion as to its explanation."

There, then, follows a left-handed compliment to Mr. Bryan, when Mr. Fosdick says that "a leading opponent of evolution, who has been trying to secure legislative enactments forbidding the teaching of it in the schools and colleges, says that evolution is a guess. A more serious misstatement of plain facts would be difficult to imagine."

As an evolutionist, Mr. Fosdick is thoroughly orthodox, in that he keeps the first and great commandment, Lambast Bryan! It may be true that Mr. Bryan, somewhere, made the statement that evolution is a "guess." Mr. Bryan said a good many things in the course of his eventful career. The version of Mr. Bryan's statement that reaches me is that "evolution is a *million of guesses* strung together." If I am correct, then Mr. Fosdick misrepresents Mr. Bryan by 999,999 guesses. And if that other statement of Mr. Fosdick's is true, that "there never was such diversity of opinion as to its explanation," then the probability is that Mr. Bryan's statement is too conservative. For all we know, it may be two millions of guesses strung together. Opinion ranks with guess, and, according to Mr. Fosdick, there "never was a greater diversity of scientific opinion," which is tantamount to saying that never was science so fertile and prolific in its guesses as now. We see, therefore, that evidence is reduced to a minimum, and the residue is scientific prepossession.

So far, as an artisan, Mr. Fosdick is piling up bricks on one wall, only to find that the bricks on the opposite wall have fallen. Still, so he avers, "the competent judges of evolution" are in "unanimous agreement as to the truth of evolution." It is pure buncombe to proclaim the harmony and concord among biologists when each discredits and disallows the suppositions of his peers, except, of course, as "to the truth of evolution." We are not prepared to dispute that Mr. Fosdick's guess has raised the number to 2,000,001. If opinion is all that there is to it, then he has just as good right to his opinion as have his two millions of coadjutors to theirs. If their opinion amounts to zero, and Mr. Fosdick's opinion is zero, then, if my mathematics do not fail me, zero plus zero equals zero. Stilted phraseology, a catalog of "respectable scientists," and verbal thimble-rigging, go but a little ways along the line of respectability, but of fact, and never in the world's history has opinion ranked as proof of a fact. We could still add another million of guesses without an appreciable change in the result.

According to Mr. Fosdick, either specific creation or evolution must give explanation to that infinite diversity that nature presents. Plants and animals—flora and fauna—must be accounted for. Two hundred thousand species of insects, and 250,000 species of invertebrates, and twenty-five thousand species of vertebrates, are on the list. Mr. Fosdick thinks that specific creation is quite out of the question, and that

evolution best explains the facts. He "stalls" at the problem that confronted Noah in getting a pair of each of these species into the ark, and at Adam naming all of them.

Well, those are great problems. But, if we may believe the "respectable scientists," there never was any Adam, nor any Noah, nor any ark, and, consequently, there is no problem. That's easy. It were an insult to Mr. Fosdick's intelligence to assume that he is unaware of the kind of teaching that follows in the wake of the evolutionary hypothesis. Wells, an up-to-date evolutionist, in his "Outline of History," will clear up the problem for Mr. Fosdick. And, of course, if there was no "first Adam," Paul was wrong in his figures when he spoke of a "second Adam." With the loss of the "second Adam" may go some other things that are needful to the survival of the Christian religion. But let us consider just one entire paragraph from the essay, for that will make the method of the author clear.

Mr. Fosdick says: "On the island of St. Helena there are 129 species of beetles. Of these, 128, peculiar to St. Helena, are found nowhere else. Can the believer in special creation be right? Did God originally make 128 species of beetles particularly designed to live on St. Helena alone?"

A footnote indicates that this line of questioning was inspired by Shailer Mathews. Mr. Fosdick went to the right place, for if he were really stuck on the Adam and Noah questions raised earlier, he could have been set right by Mathews. But, as we can see, both in the original source, and in the use made of it by Mr. Fosdick, the whole thing is a case of specious pleading. Since that, as a pastime, is all the vogue, let us indulge ourselves a little. What difficulty in the way of specific creation is avoided by the acceptance of evolution? It is sure that the question asked is a poser. But we were not there when these beetles were made, or "particularly designed." But it's our turn now: Was Mr. Fosdick there? Or, since Shailer Mathews is the older man, was he there? Or, if neither of them was there, did they ever see one species of beetle changed into another species of beetle? If beetles came out of a unicellular germ, that cell was a specific creation, and as Mr. Fosdick, as a theistic evolutionist, premises God, what kind of a God does he premise who could not have "particularly designed" these beetles?

Here is what Wells says in his "Outline": "We do not know how life began upon the earth. Biologists, that is to say, students of life, have made guesses about these beginnings." "But," says Professor Thomson, "evolution is the only scientific way of answering the question, How has the present-day system come into being?" "Now you see it, and now you don't!" If we may reason upon the matter, so far as observation leads the way, life comes from antecedent life. If we are to note the transition from plant life to animal life, what light upon the method does evolution throw that is one whit superior to the doctrine of specific creation? I decline to follow, in this matter, a man who is not in position to know more about it than I do.

The foregoing sentence sounds conceited. I do not mean it as such; I mean only to say that I do not know any more about it than the word of God has

given, and I am sure that Mr. Fosdick does not know any more than that. The most he has succeeded in doing is to cast aspersion upon the doctrine of specific creation. The case for evolution remains to be made out. We will, therefore, attend to his alleged proofs for the hypothesis. But even before that, we should note Mr. Fosdick's contention that if "the hypothesis of special creation is given up, one straightway becomes an evolutionist. He may try to protect himself from going the whole way. . . . But either he must be a special creationist or else in some degree he must be an evolutionist." In reply, it is enough to say that any one who sets out to be an evolutionist must in some degree be a special creationist, else he will reach a point where he has nothing to start with, unless it has been specifically created. It is seen thus that the shoe fits quite as comfortably on the other foot, and evolution yet requires proof. That proof should be something more than the essayist's cogitations on the subject.

Four fields of study are pointed to as affording this needed proof. These four fields—paleontology, embryology, comparative anatomy and contemporary evolution—are appealed to.

Paleontology deals with the topic of the fossil remains that are found imbedded within the earth's strata. These fossils are the remains of extinct life. Our author claims that through these "finds" life is traced from its simple to its complex forms. The horse, elephant, crocodile and cuttle-fish are particularly alluded to as offering a complete genealogical sequence. We need not stop to rehearse the difficulties that a keener logic compels. That paleontologists, in spite of these difficulties, have proclaimed a linear and lineal descent for some of these named species is true. But that their reasoning in that field is nothing more than a guess, or, to use Mr. Fosdick's politer term, an opinion, is just as certain. The subject is deep, so deep as to be subterranean. It pretends to an ability to take a fragment of a bone or a tooth, and from it construct the replica of the individual from which the bone or the tooth was taken. That is to say, the paleontologist pretends to the ability of making the exact likeness of a thing that he never saw, which is about as sensible as swearing to the size of a barrel by measuring the bung. As a kind of "bungology," paleontology ranks high, and its deductions on data so fragmentary are taken as proof by the evolutionist, and this, again, rests upon no higher kind of proof than a mere opinion. Opinion, as we have seen, is of equal rank with a guess.

With respect to embryology, it is maintained that the unborn life in its developments re-enacts its ancestral history. Our author cautions us against claiming too much for this doctrine. In the doctrine of recapitulation, he realizes that he is skating over thin ice. But just as the psychologist in the study of the growing boy notes in succession his savage, semi-civilized and civilized stages, so, argues Mr. Fosdick, does the evolutionist see the embryo pass through its ancestral history.

Presumably, man is the last in the scale of evolution. If in embryo he repeats his ancestral history, he may truly say: "I'm the heir of all the ages in the foremost files of time." But think what a busy youngster he is. Back of him there are "two hundred thousand named species of insects, one hundred thou-

and named species of dicotyledonous flowering plants, twenty-five thousand named species of vertebrates, and ten times as many invertebrates," not to mention particularly "129 species of beetles." This gives a grand total of no fewer than 575,000 of named species of life that this embryo must re-enact. But man's embryonic existence continues over a period of 388,000 minutes, so that reduced to figures makes it necessary that the embryo must change from some *recognizable species of something* to some other *recognizable form of something else* at the rate of about one and one-half each minute. The wonder is that the embryo can move according to schedule. If there is any recapitulation, it must be complete, or the theory will not survive the disaster. If at any place there is a detour, the recapitulation is incomplete. Can the thesis endure such a shock? If the forms have to pass in succession, is it of any importance that they shall follow some given order? Is the doctrine just as sensible if one says it backward as when he drools it out forward? Is it just as credible wrong end to as it is if it proceeds in direct order? To ask questions like these reminds one of something he can't think of. Yet that is evolution.

Comparative anatomy comes next. It deals in structural forms and in similarity of muscles and organs. Mr. Fosdick repeated his evolutionary catechism in due form when he quoted that jingle that almost sings itself: "The paddle of the turtle, the wing of the bird, the flipper of the whale, the fore leg of the horse and the arm of the man" disclose the same archetypal form. And when to these he added what is called the "vestigial structures," the leftovers from past evolutionary stages, the argument appeared to be complete. Eighty such vestigial parts, so he said, have been cataloged, such as the rudimentary tail, the vermiform appendix, muscles for moving the ears and yet others that raised the hair—all useless to man, but evidence of his ancestry.

We have alluded to the fact that Darwin has been dismissed from the field of discussion by the biologists themselves. Mr. Fosdick's argument is merely one of the "vestigial parts" of Darwin's contribution to the cult. Natural selection petered out, chiefly because natural selection did not select at the command of the biologists. Mr. Fosdick, in common with others of the "competent" judges and the "respectable scientists," boasts of a close adherence to facts, and a corresponding freedom from metaphysics. He says: "As a matter of fact, evolutionists have been endeavoring through long and patient study to understand some obvious phenomena which face us on every side and clearly need an explanation." The studiousness may be allowed, but what metaphysician would not envy them in the liberty that they take with the facts? As a theory, natural selection is defunct; sexual selection earliest fell by the wayside; acquired characteristics, it has been found, can not be inherited, and overboard go Darwin and Lamarck. Darwin, Huxley and Spencer are examples of "love's labor lost." Wallace, Weissman and others of their day have at length found successors in the galaxy of "competent judges of the truth of evolution." That is why we conclude that all that is left us now is that list of "vestigial parts" of evolution itself.

Speaking of "vestigial parts," has Mr. Fosdick

over considered the fact that man, the male of the species, has mammary glands? He likely knows such to be the case, but inadvertently overlooked the opportunity to say as much in his lengthy article. I am sure that he failed to think of this fact, else he would have cited it as conclusive "proof" that in man's ancestral history there was a time when the male performed the functions of motherhood. Or, if this explanation of his probable course is not correct, he might have turned it to good effect in arguing nature's prophetic and anticipative powers, and, in this instance, would have seen a wise provision on the part of Dame Nature to make sure that if man ever did perform the functions of motherhood, he would be amply provided with the organs needed to nourish his offspring. For sheer brilliancy this conjecture of mine compares favorably with anything Mr. Fosdick imagined in some of his assertions. The only thing that will hinder my vagary from being counted a classic is that it broke forth upon the world unattended and unheralded. If only it had been sponsored by some "respectable scientists," it might have been carried to the four corners of the earth.

I speak not by revelation. I speak as a fool. I dwell in the midst of a company of fools. The only palliating circumstance for my affront to my readers is that I am not a whit worse than are some of the "respectable scientists" and "competent judges of the truth."

In turning, then, to the consideration of the Christian religion, it is highly important that we define the thing we are to compare with evolution. If we are to permit the "respectable scientists" to supply us with the data for our definition, it may be that they will give us an emasculated faith. They are smart enough to invent a religion if it should so happen that their vaporings about evolution are not in accord with the teachings of the Bible. The only question, in that case, is whether they are going to be able to "get by with it."

It is no libel to thus affirm the strength of the inventive powers of these teachers. The writer of the essay under review has shown that he "swings a mean foot" when it comes to leaping from one position to another. Reputedly a Baptist, and, therefore, a believer in immersion, he has found no difficulty in bargaining with a reputedly Baptist church to serve as its pastor, providing it will renounce its "ancestral history," and will cast the doctrine of immersion into that vast limbo of exploded theologies. A religion of that kind can be made to fit anything, and, of course, there is no disharmony between it and evolution. There are some of us who would hesitate to accept that kind of teaching as being simon-pure Christianity. So it would look as though it still remains unproved that there is concord between the evolutionary hypothesis as expounded by Mr. Fosdick, and the religion of Christ as established by Christ and His apostles.

I shall now turn to an accepted authority on the exposition of the doctrine of evolution: viz., H. G. Wells in his "Outline of History." I have not learned of his being excommunicated from the cult of the evolutionists. Two excerpts will suffice for our purpose. The first deals with the personality of Jesus according to the narratives of the four Gospels. Wells says:

Almost the only sources of our information about the personality of Jesus are derived from the four Gospels. . . . The first three Gospels—the Gospels of Matthew, Mark and Luke—many suppose to be derived from some earlier documents; the Gospel of John has more idiosyncrasy, and is colored by theology of a strongly Hellenic type. . . . All four agree in giving us a picture of a very definite personality: they carry the same conviction of reality that the early accounts of Buddha do. In spite of miraculous and incredible additions, one is obliged to say: "Here was a man. This part of the tale could not have been invented."

But just as the personality of Gautama Buddha has been distorted and obscured by the stiff, squatting figure, . . . so one feels that the lean and strenuous personality of Jesus is much wronged by the unreality and conventionality that a mistaken reverence has imposed upon his figure in modern Christian art; . . . and it may be that early parts of the Gospels are secretions of the same nature. . . . There is, as the reader may see for himself, no clear and emphatic assertion in these books of the doctrines which Christian teachers of all denominations find generally necessary to salvation. Except for one passage in John's Gospel, it is difficult to get any words actually ascribed to Jesus in which He claimed to be the Messiah, . . . and still more difficult is it to find any claim to be part of the Godhead, or any passage in which is explained the doctrine of the atonement. . . . All that is most characteristically Christian in worship and usage he ignored.

There follows, in the same connection, a hasty sketch of the life of Jesus, especially stressing His teaching, which concludes with a brief reference to the resurrection—called a "story"—while the ascension of Jesus is referred to as a "magical ascension." This is an evolutionist's story of Christ. The reader may judge for himself whether it is possible to square these utterances with the plain, explicit teaching of the New Testament.

Having disposed of the Gospels in such a manner as to render them powerless to create faith in Jesus as the Messiah, or the Christ, this author (Wells) gives his attention to Paul. He says:

Presently there arose a second great teacher, whom many modern authorities regard as the real founder of Christianity—Saul of Tarsus, or Paul. . . . He was a religious theorist and teacher before he heard of Jesus of Nazareth and he appears in the New Testament at first as the bitter critic and antagonist of the Nazarene. The present writer has been unable to find any discussion of the religious ideas of Paul before he became a follower of Jesus. . . . What will be clear to any one who reads his Epistles, side by side with the Gospels, is that his mind was saturated with the idea which does not appear at all prominently in the reported sayings and teachings of Jesus, the idea of a sacrificial person who is offered up to God as an atonement for sin.

What Jesus preached was the new birth of the human soul; what Paul preached was the ancient religion of the priest and altar and propitiatory bloodshed. Jesus was to him the Easter lamb, that traditional victim without spot or blemish who haunts all the religions of the dark white peoples. . . . Paul had never seen Jesus. His knowledge of Jesus must have been derived from the hearsay of the original disciples. . . . The rapid spread of Christian teaching certainly owes more to Paul than to any other single man.

That is the kind of Christian (?) teaching that is consonant with the evolutionary hypothesis. This is evolution in its flower. One may not believe Wells and may feel that he has outraged every Christian sense, but no one will dare to say that he did not have the courage of his convictions. His teaching, as extreme as it appears, is in logical sequence of his theme. We believe that he "is wise above what is written," but, at that, it must be conceded to comport with the evolutionary hypothesis. Until Mr. Fosdick will take the teaching of Wells, and so handle it as to show the utter falsity of the positions here taken, one can but

conclude that he has stopped short of his full duty. Until this can be done, it will stand as the truth concerning the menace of evolution. The simple-minded follower of Jesus, who has confessed his faith in Christ as the Son of God, will be unable to read Wells with satisfaction to his inner life. For if Jesus is not the Christ, the Son of the living God, and if Paul, not Jesus, is the founder of Christianity, then Christianity is of the earth earthy. From that kind of teaching no one will be able to construct a faith that will save his soul.

It takes almost a page and one-half of printed matter in Wells' book to merely catalog the names of those who have collaborated with him in the writing of this ponderous work. The "respectable" and the "competent" are there, those who are after Mr. Fosdick's own heart. Preachers are listed with the rest. And I give it as my most solemn conviction that when one has read after these men, he must bewail the fact that they have taken away our Lord, and we know not where they have laid Him.

Any one who dabbles with that stuff will become tarred by the same stick. I have already said that Mr. Fosdick is urbane and cultured, and withal a man of pleasing personality. But with all his attainments he is wrong. I resent with all the power I possess that assumed loftiness that will permit any man of whatever name or fame to speak down to Jesus Christ and the apostle Paul. Such a man may be able to write with such grace and unction as to deceive the very elect, but his power only pulls down upon his head a surer condemnation. Let us not be glamored and dazzled by the high-sounding titles of respectability and competence. The Lord has never led His people very far down the narrow lane of respectability. "For you see your calling, brethren, how that not many wise after the flesh, not many mighty, not many noble are called. But God hath chosen the foolish things of the world to confound the wise, and God hath chosen the weak things of the world to confound the things which are mighty; and the base things of the world, and the things which are despised, hath God chosen, yea, and the things which are not, to bring to naught the things that are, that no flesh should glory in his presence."

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NOAH'S ARK

I have been told that Noah's ark was not large enough to hold all that the Bible says it held. Will you kindly answer this objection? A. W.

In considering this question, we should recognize that the Bible record is very brief. It does not tell on what basis the "kinds" of animals were selected or how the quarters were arranged for their accommodation. There must have been some very careful planning to make the maximum use of the space within the great boat. We naturally wonder how big the ark was and whether every species and subspecies of animal and bird had to be taken into the ark to preserve their "kind."

The description of the ark is found in Genesis 6:14-16. "Make thee an ark of gopher wood; rooms shalt thou make in the ark, and shalt pitch it within and without with pitch. And this is the fashion which thou shalt make it of: The length of the ark shall be three hundred cubits, the breadth of it fifty cubits, and the height of it thirty cubits. A window shalt thou make to the ark, and in a cubit shalt thou finish it above; and the door of the ark shalt thou set in the side thereof; with lower, second, and third stories shalt thou make it."

The Hebrew word translated "ark" means box or chest, which suggests that the structure was a flat-bottomed barge with broad, square ends. This would make possible the maximum capacity for the measurements given: 300 cubits in length, 50 cubits in width, and 30 cubits in height. Cubits in ancient times varied from 17.6 inches to 25.19 inches. If we adopt a cubit of average length, 20.6 inches, which was commonly used, the ark was 515 feet long, 86 feet wide, and 52 feet high (three stories). The capacity was 2,303,080 cubic feet. Each of the three decks had an area of 44,290 square feet, and there was a space of approximately 17 feet between decks. This would allow room for many tiers of small cages, or "nests," as the Hebrew word translated "rooms" literally means.

If we use the largest cubit in calculating the capacity of the ark, we would have a boat of practically twice the capacity noted above.

The number of varieties, or "kinds," of animals that went into the ark need not have been as great as some have estimated. For example, the "kinds" of dogs were not necessarily as numerous as the breeds of dogs known today. One pair could have preserved the dog family. The same would be true of cats, horses, cattle, and all other species. Large animals, such as elephants and hippopotamuses, could have been preserved by taking into the ark a young pair of each. Thus space and food would have been conserved.

The living cargo of the ark was limited to land animals and birds. Genesis 6:19-21. Fishes and all other types of marine creatures were left in their natural element. Plants of all kinds also had to survive outside the ark.

Though considerations such as these would help to make the ark equal to the cargo assigned to it, we cannot omit the supernatural element in the preservation of Noah and his family and the animals with him. God directed Noah in building the ark; He caused the animals to go into it. After they were there, they would still have perished in the violence of the Flood had He not miraculously preserved the great boat and its occupants. God doubtless caused the food supply to last longer than it ordinarily would for such a great assemblage of animals; and He caused beasts naturally antagonistic to one another to dwell together in peace in their crowded quarters.

SIGNS of the TIMES

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? Does information gleaned from the Bible prove at least the approximate age of the earth? If not, do Genesis 1 and 2 permit a likelihood of a much greater age than the commonly accepted age of approximately 6,000 years?

Answer: Time began when God created the heaven and the earth (Gen. 1:1), but the Holy Spirit has given us no indication in the creation story with regard to the exact number of years that have elapsed since the universe came into being. Consequently, we have no way of determining the exact age of the world, and our church has rightly refrained from trying to do so. Yet in our literature the opinion is repeatedly expressed that the beginning occurred approximately 6,000 years ago, or about 4,000 years before the birth of Christ.

The basic considerations which lead to this conclusion are the following:

1. The Holy Scriptures expressly state that God created the heaven and the earth in the beginning (Gen. 1:1) and in six days (Ex. 20:11; 31:17). These days cannot be understood to have been long periods, because they are limited on both sides by "evening and morning" (Gen. 1:5, 8, 13, 19, 23, 31). This is made more certain by Ex. 20:8-11, where the seventh day of creation is used as a parallel to the Jewish Sabbath.

2. The Scriptures clearly assert that the first people were created on the sixth day after the beginning (Gen. 1:26-31). Jesus points to the same creation at the beginning when He says: "Have ye not heard that He which made them at the beginning," etc. (Matt. 19:4; Mark 10:6). There were neither two creations nor two beginnings.

3. The record of Christ's ancestral line (Luke 3:23-28) reaches back to Adam, with whom the human race began on the sixth day (Acts 17:26; Rom. 5:14, 17, 19; 1 Cor. 15:45; 1 Tim. 2: 13, 14). Yet even if, as some hold, the New Testament listing omits several Old Testament names from Christ's ancestral line, the difference is quite small.

4. The genealogy, or ancestral history, of the most prominent patriarchs before the Flood in Noah's time, with individual ages added, establishes the period from the creation to the Flood as one of 1656 years (Gen. 5). From the flood, which lasted a little over a year (Gen. 7:11 and 8:13, 14), to the birth of Abraham, according to Gen. 11: 10-26, was a matter of 290 years, making the span from Adam to Abraham 1946 years. Data for the period between Abraham and Christ are not so complete, nor are they easy to organize and correlate; yet in the light of the genealogy given in Luke 3 the span of years would not reach materially beyond 20 centuries.

5. The authors of the Greek translation of the Old Testament (Septuagint, third century B. C.) ascribe higher ages to the pre-Flood patriarchs when they brought forth their sons, though their total ages, with one exception, are the same as in the King James Version. Even if we accept these figures on the theory that the translators of the Septuagint possessed more ancient Hebrew manuscripts than those on which modern translations are based, the Old Testament span of years would be increased by only about 1,550 years. That would make the length of the Old Testament approximately 5,550 years, which is still a far cry from the long periods assumed by many people.

The Scriptures cannot be broken, said Christ (John 10:35). That applies also to the Biblical data mentioned above, as it does to other statements of Moses which Jesus used as proof of the truth of His teachings (Luke 24:27, 44). Hence, even though the exact age of the earth cannot be determined from the available data, there will be no

marked departure from the widely accepted figure of approximately 6,000 years. No scientific or historical evidence to the contrary has yet been brought. The records of secular history do not go back as far as Adam, and the data which modern experimental science gives us rest on debatable assumptions. The believing child of God rests his case on the Biblical record. To allow for long periods before the creation of man, or to regard the six days as long periods, does violence to the Mosaic record and is consequently unacceptable. We must believe either God or man. We take our stand on His Word. (John 17:17; 2 Tim. 3:15-17)

The reader is referred to the chapter "The Age of the Earth" in the recently published book (Concordia Publishing House, St. Louis, Mo.) titled *Darwin, Evolution, and Creation.* In this article the author, Dr. Paul A. Zimmerman, observes: "The Bible does not give us sufficient information to date the time of creation and the age of the earth. . . . Scripture, then, does not give a precise calendar. But it does give the impression of an earth far younger than the theories of some scientists indicate. Neither side can be definite." (Pp. 165 to 166)

THE LUTHERAN WITNESS
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